Permit Modification Fact Sheet

General Information

Permit Number:	WI-0022195-09-1	
Permittee Name:	Village of St. Nazianz	
Address:	PO Box 302	
City/State/Zip:	St Nazianz WI 54232	
Discharge Location:	The street address of the treatment facility is 608 North 1st Ave. It is about ¼ mile west of County Hwy. A on Baer Road and is in the NE ¼ of the SW ¼ of Section 24, T 18N R 21E, Manitowoc County. The outfall is at latitude 44°00'52" North, longitude 87°55'37" West.	
Receiving Water:	an unnamed tributary to Mud Creek	
Stream Flow ($Q_{7,10}$):	< 0.01 cfs (from USGS, for Station M28 near outfall 001)	
Stream Classification:	warm water sport fish community, non-public water supply	
Design Flow(s)	Daily Maximum	0.30 MGD (source: 2005 fact sheet)
	Weekly Maximum	0.298 MGD (source: 5/16/05 WQBEL memo)
	Monthly Maximum	not available
	Annual Average	0.20 MGD (source: 2008 facilities modification report)
Significant Industrial Loading?	Contributors of non-domestic wastewater in varying amounts include New Holland Agriculture (formerly Miller - St. Nazianz), Miller Implement, Riesterer Machine, Country Styler salon, Braun Electric, Madson's Garage, Small Town Trucks, Egan Dental, and Waniger Auto	
Operator at Proper Grade?	**Facility Subclasses & Classification:** Advanced A1, B, C, L **OIC Subclasses & Grade:** Christopher Schaller, OIC, is certified in subclasses A1, B, C, D, and L, all at the Advanced Level.	
Approved Pretreatment Program?	N/A	

Facility Description

A conventional gravity sewer system, with no lift stations, collects raw wastewater from throughout the Village. At the wastewater treatment facility (WWTF), preliminary treatment is accomplished with a cylindrical fine bar screen, and wastewater then passes through a Parshall flume equipped with an ultrasonic level sensor for measuring flow. A septage receiving station built in 2010 follows, but it currently is not in use. Biological treatment is then performed by pumping wastewater into an oxidation ditch. A flocculating clarifier for the mixed liquor is arranged concentrically within the oxidation ditch. Alum is added for phosphorus removal and toxicity reduction. Wastewater then passes through a microscreen to remove fine particulate matter. Treated effluent flows over a V-notch weir that has an ultrasonic level sensor for flow measurement. Sludge that is wasted from the clarifier is further stabilized in a storage tank, prior to land application. Disinfection of the effluent was discontinued during the current permit term, in response to a 2009 Use Attainability Analysis which determined that the receiving water does not support recreational use.

Sample Point Designation

Sample Point Number	Discharge Flow, Units, and Averaging Period	Sample Point Location, Waste Type/Sample Contents and Treatment Description (as applicable)
701	0.060 MGD Average 2015 – Feb. 2017	Influent - Representative samples shall be collected from the influent automatic sampler, drawing samples from the Parshall flume.
001	0.059 MGD Average 2015 – Feb. 2017	Effluent - Representative composite samples shall be collected from the effluent automatic sampler, drawing samples from the open channel following the microscreen. Representative grab samples shall be collected at the outfall structure.
002	166,700 gallons Average 2013 – 2015	Liquid Sludge: Representative samples of the liquid sludge shall be collected from the sludge storage tank.

1 Influent - Proposed Monitoring

Sample Point Number: 701- Influent

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total		mg/L	2/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total		mg/L	2/Week	24-Hr Flow Prop Comp	

Changes from Previous Permit:

Unchanged by the permit modification.

Explanation of Limits and Monitoring Requirements

Unchanged by the permit modification.

2 Surface Water - Proposed Monitoring and Limitations

Sample Point Number: 001- Effluent

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Flow Rate		MGD	Daily	Continuous	
BOD5, Total	Weekly Avg	10 mg/L	2/Week	24-Hr Flow	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
				Prop Comp	
BOD5, Total	Monthly Avg	10 mg/L	2/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Weekly Avg	10 mg/L	2/Week	24-Hr Flow Prop Comp	
Suspended Solids, Total	Monthly Avg	10 mg/L	2/Week	24-Hr Flow Prop Comp	
pH Field	Daily Min	6.0 su	5/Week	Grab	
pH Field	Daily Max	9.0 su	5/Week	Grab	
Dissolved Oxygen	Daily Min	4.0 mg/L	5/Week	Grab	
Chloride	Weekly Avg	490 mg/L	4/Month	24-Hr Flow Prop Comp	Interim limit
Phosphorus, Total	Monthly Avg	6.3 mg/L	Monthly	24-Hr Flow Prop Comp	Interim limit
Nitrogen, Ammonia (NH3-N) Total	Daily Max	8.6 mg/L	2/Week	24-Hr Flow Prop Comp	Applies October – May
Nitrogen, Ammonia (NH3-N) Total	Daily Max	7.1 mg/L	2/Week	24-Hr Flow Prop Comp	Applies June – September
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	10 mg/L	2/Week	24-Hr Flow Prop Comp	Applies October – March
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	4.4 mg/L	2/Week	24-Hr Flow Prop Comp	Applies April – May
Nitrogen, Ammonia (NH3-N) Total	Weekly Avg	2.6 mg/L	2/Week	24-Hr Flow Prop Comp	Applies June – September
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	4.2 mg/L	2/Week	24-Hr Flow Prop Comp	Applies October – March
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	1.8 mg/L	2/Week	24-Hr Flow Prop Comp	Applies April – May
Nitrogen, Ammonia (NH3-N) Total	Monthly Avg	1.1 mg/L	2/Week	24-Hr Flow Prop Comp	Applies June – September
Temperature Maximum		deg F	3/Week	Measure	Monitoring only in 2022
Chronic WET	Monthly Avg	1.0 TUc	Quarterly	24-Hr Flow Prop Comp	Effective July 1, 2020

Changes from Previous Permit:

Removal of Temperature Maximum Weekly Average effluent limitations that were to become effective in 2022 and 2023 following the submittal and approval of a Dissipative Cooling Evaluation. Temperature Maximum effluent monitoring remains for 1 year (2022) in order to collect temperature data prior to the next permit reissuance. All other monitoring requirements and limitations remain unchanged by the permit modification.

Explanation of Limits and Monitoring Requirements

Refer to the Dissipative Cooling Evaluation Checklist by Nicole Krueger, Water Resources Engineer, dated February 9, 2021. The permittee conducted a dissipative cooling evaluation, as allowed under s. NR 106.59, Wis. Adm. Code.

3 Land Application - Proposed Monitoring and Limitations

Municipal Sludge Description						
Sample Point	**Sludge Class (A or B)**	**Sludge Type (Liquid or Cake)**	**Pathogen Reduction Method**	**Vector Attraction Method**	**Reuse Option**	**Amount Reused/Disposed (Dry Tons/Year)**
002	B	Liquid	Fecal Coliform Reduction	Injection / Incorporation	Land Application	166,700
Does sludge management demonstrate compliance? Yes						
Is additional sludge storage required? No						
Is Radium-226 present in the water supply at a level greater than 2 pCi/liter? No						
Is a priority pollutant scan required? N/A						

Sample Point Number: 002- Liquid Sludge

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Solids, Total		Percent	Annual	Composite	
Arsenic Dry Wt	High Quality	41 mg/kg	Annual	Composite	
Arsenic Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Cadmium Dry Wt	High Quality	39 mg/kg	Annual	Composite	
Cadmium Dry Wt	Ceiling	85 mg/kg	Annual	Composite	
Copper Dry Wt	High Quality	1,500 mg/kg	Annual	Composite	
Copper Dry Wt	Ceiling	4,300 mg/kg	Annual	Composite	
Lead Dry Wt	High Quality	300 mg/kg	Annual	Composite	
Lead Dry Wt	Ceiling	840 mg/kg	Annual	Composite	
Mercury Dry Wt	High Quality	17 mg/kg	Annual	Composite	
Mercury Dry Wt	Ceiling	57 mg/kg	Annual	Composite	

Monitoring Requirements and Limitations					
Parameter	**Limit Type**	**Limit and Units**	**Sample Frequency**	**Sample Type**	**Notes**
Molybdenum Dry Wt	Ceiling	75 mg/kg	Annual	Composite	
Nickel Dry Wt	High Quality	420 mg/kg	Annual	Composite	
Nickel Dry Wt	Ceiling	420 mg/kg	Annual	Composite	
Selenium Dry Wt	High Quality	100 mg/kg	Annual	Composite	
Selenium Dry Wt	Ceiling	100 mg/kg	Annual	Composite	
Zinc Dry Wt	High Quality	2,800 mg/kg	Annual	Composite	
Zinc Dry Wt	Ceiling	7,500 mg/kg	Annual	Composite	
Nitrogen, Total Kjeldahl		Percent	Annual	Composite	
Nitrogen, Ammonium (NH4-N) Total		Percent	Annual	Composite	
Phosphorus, Total		Percent	Annual	Composite	
Phosphorus, Water Extractable		% of Tot P	Annual	Composite	
Potassium, Total Recoverable		Percent	Annual	Composite	
PCB Total Dry Wt	High Quality	10 mg/kg	Once	Composite	
PCB Total Dry Wt	Ceiling	50 mg/kg	Once	Composite	

Changes from Previous Permit:

Unchanged by the permit modification.

Explanation of Limits and Monitoring Requirements

Unchanged by the permit modification.

4 Compliance Schedules

4.1 Whole Effluent Toxicity Limit

Required Action	Due Date
Toxicity Identification - TRE Report: Complete the toxicity identification portion of the toxicity reduction evaluation (TRE). Submit a TRE report to the Department presenting the toxicity identification results, along with actions planned, and taken to date, to reduce toxicity.	06/30/2019
WET Limit Effective - Achieve Compliance: Complete all actions identified in the TRE plan and achieve compliance with the WET limitation.	06/30/2020

4.2 Facility Upgrade

Required Action	Due Date
Facility Plan: Submit a facility plan for the phosphorus removal system to be installed for toxicity reduction.	05/31/2019
Complete Construction: Complete construction of a phosphorus removal system for toxicity reduction.	05/31/2020

4.3 Chloride Target Value

Required Action	Due Date
Annual Chloride Progress Report: Submit an annual chloride progress report. The annual chloride progress report shall: Summarize activities that have been conducted for each of the chloride source reduction measures listed in the approved Source Reduction Plan; Include an analysis of trends in weekly, monthly and annual average chloride concentrations and total mass discharge of chloride based on chloride sampling and flow data; and Include an analysis of how influent and effluent chloride varies with time and with significant loadings of chloride such as loads from industries or road salt intrusion into the collection system. Note that the interim limitation of 490 mg/L remains enforceable until new enforceable limits are established in the next permit issuance. The first annual chloride progress report is to be submitted by the Date Due.	11/30/2018
Annual Chloride Progress Report #2: Submit the chloride progress report as defined above.	11/30/2019
Annual Chloride Progress Report #3: Submit the chloride progress report as defined above.	11/30/2020
Annual Chloride Progress Report #4: Submit the chloride progress report as defined above.	11/30/2021
Final Chloride Report: Submit the final chloride report documenting the success in meeting the chloride target value of 440 mg/L, as well as the anticipated future reduction in chloride sources and chloride effluent concentrations. The report shall summarize chloride source reduction measures that have been implemented during the current permit term and state which, if any, source reduction measures from the approved Source Reduction Plan were not pursued and why. The report shall include an analysis of trends in weekly, monthly and annual average chloride concentrations and total mass discharge of chloride based on chloride sampling and flow data covering the current permit term. The report shall also include an analysis of how influent and effluent chloride varies with time and with significant loadings of chloride such as loads from industries or road salt intrusion into the collection system. Additionally, the report shall include proposed target values and source reduction measures for negotiations with the department if the permittee intends to seek a renewed chloride variance per s. NR 106.83, Wis. Adm. Code, for the reissued permit. Note that the target value is the benchmark for evaluating the effectiveness of the chloride source reduction measures, but is not an enforceable limitation under the terms of this permit.	11/30/2022
Annual Chloride Reports After Permit Expiration: In the event that this permit is not reissued on time, the permittee shall continue to submit annual chloride reports each year covering source reduction measures implemented and chloride concentration and mass discharge trends.	

4.4 Water Quality Based Effluent Limits (WQBELs) for Total Phosphorus

Required Action	Due Date
Operational Evaluation Report: The permittee shall prepare and submit to the Department for approval an operational evaluation report. The report shall include an evaluation of collected effluent data, possible source reduction measures, operational improvements or other minor facility modifications that will optimize reductions in phosphorus discharges from the treatment plant during the period prior to complying with final phosphorus WQBELs and, where possible, enable compliance with final phosphorus WQBELs by June 30, 2021. The report shall provide a plan and schedule for implementation of the measures, improvements, and modifications as soon as possible, but not later than June 30, 2021 and state whether the measures, improvements, and modifications will enable compliance with final phosphorus WQBELs. Regardless of whether they are expected to result in compliance, the permittee shall implement the measures, improvements, and modifications in accordance with the plan and schedule specified in the operational evaluation report. If the operational evaluation report concludes that the facility can achieve final phosphorus WQBELs using the existing treatment system with only source reduction measures, operational improvements, and minor facility modifications, the permittee shall comply with the final phosphorus WQBEL by June 30, 2021 and is not required to comply with the milestones identified below for years 3 through 9 of this compliance schedule ('Preliminary Compliance Alternatives Plan', 'Final Compliance Alternatives Plan', 'Final Plans and Specifications', 'Treatment Plant Upgrade to Meet WQBELs', 'Complete Construction', 'Achieve Compliance'). Study of Feasible Alternatives - If the Operational Evaluation Report concludes that the permittee cannot achieve final phosphorus WQBELs with source reduction measures, operational improvements and other minor facility modifications, the permittee shall initiate a study of feasible alternatives for meeting final phosphorus WQBELs and comply with the remaining required actions of this schedule of compliance. If the Department disagrees with the conclusion of the report, and determines that the permittee can achieve final phosphorus WQBELs using the existing treatment system with only source reduction measures, operational improvements, and minor facility modifications, the Department may reopen and modify the permit to include an implementation schedule for achieving the final phosphorus WQBELs sooner than June 30, 2027.	05/31/2019
Compliance Alternatives, Source Reduction, Improvements and Modifications Status: The permittee shall submit a 'Compliance Alternatives, Source Reduction, Operational Improvements and Minor Facility Modification' status report to the Department. The report shall provide an update on the permittee's: (1) progress implementing source reduction measures, operational improvements, and minor facility modifications to optimize reductions in phosphorus discharges and, to the extent that such measures, improvements, and modifications will not enable compliance with the WQBELs, (2) status evaluating feasible alternatives for meeting phosphorus WQBELs.	05/31/2020
Preliminary Compliance Alternatives Plan: The permittee shall submit a preliminary compliance alternatives plan to the Department. If the plan concludes upgrading of the permittee's wastewater treatment facility is necessary to achieve final phosphorus WQBELs, the submittal shall include a preliminary engineering design report. If the plan concludes Adaptive Management will be used, the submittal shall include a completed Watershed Adaptive Management Request Form 3200-139 without the Adaptive Management Plan. If water quality trading will be undertaken, the plan must state that trading will be pursued.	05/31/2021
Final Compliance Alternatives Plan: The permittee shall submit a final compliance alternatives	05/31/2022

plan to the Department. If the plan concludes upgrading of the permittee's wastewater treatment is necessary to meet final phosphorus WQBELs, the submittal shall include a final engineering design report addressing the treatment plant upgrades, and a facility plan if required pursuant to ch. NR 110, Wis. Adm. Code. If the plan concludes Adaptive Management will be implemented, the submittal shall include a completed Watershed Adaptive Management Request Form 3200-139 and an engineering report addressing any treatment system upgrades necessary to meet interim limits pursuant to s. NR 217.18, Wis. Adm. Code. If the plan concludes water quality trading will be used, the submittal shall identify potential trading partners. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	
Progress Report on Plans & Specifications: Submit progress report regarding the progress of preparing final plans and specifications. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	05/31/2023
Final Plans and Specifications: Unless the permit has been modified, revoked and reissued, or reissued to include Adaptive Management or Water Quality Trading measures or to include a revised schedule based on factors in s. NR 217.17, Wis. Adm. Code, the permittee shall submit final construction plans to the Department for approval pursuant to s. 281.41, Stats., specifying treatment plant upgrades that must be constructed to achieve compliance with final phosphorus WQBELs, and a schedule for completing construction of the upgrades by the complete construction date specified below. (Note: Permit modification, revocation and reissuance, and reissuance are subject to s. 283.53(2), Stats.) Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	05/31/2024
Treatment Plant Upgrade to Meet WQBELs: The permittee shall initiate construction of the upgrades. The permittee shall obtain approval of the final construction plans and schedule from the Department pursuant to s. 281.41. Stats. Upon approval of the final construction plans and schedule by the Department pursuant to s. 281.41, Stats., the permittee shall construct the treatment plant upgrades in accordance with the approved plans and specifications. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	08/31/2024
Construction Upgrade Progress Report #1: The permittee shall submit a progress report on construction upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	08/31/2025
Construction Upgrade Progress Report #2: The permittee shall submit a progress report on construction upgrades. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	08/31/2026
Complete Construction: The permittee shall complete construction of wastewater treatment system upgrades.	06/30/2027

Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	
WQBELs Effective - Achieve Compliance: The permittee shall achieve compliance with final phosphorus WQBELs. Note: See 'Alternative Approaches to Phosphorus WQBEL Compliance' in the Surface Water section of this permit.	07/01/2027

4.5 Operator-in-Charge at Advanced Level Certification

Required Action	Due Date
Advanced Level Certification: Notify the Department by the due date of the designated OIC with Advanced level certification for each applicable subclass.	07/01/2018

Explanation of Compliance Schedules

The Temperature Limits and Dissipative Cooling Evaluation schedule was removed following the submittal and approval of a Dissipative Cooling Evaluation and the subsequent removal of temperature maximum effluent limitations. All other schedules remain unchanged by the permit modification.

Attachments:

Dissipative Cooling Evaluation Checklist by Nicole Krueger, Water Resources Engineer, dated February 9, 2021

Proposed Expiration Date:

June 30, 2023 (unchanged by the permit modification)

Prepared By: Sarah Donoughe, Wastewater Specialist

Date: November 17, 2021